

The extended language network: Language-selective brain areas whose contributions to language remain to be discovered

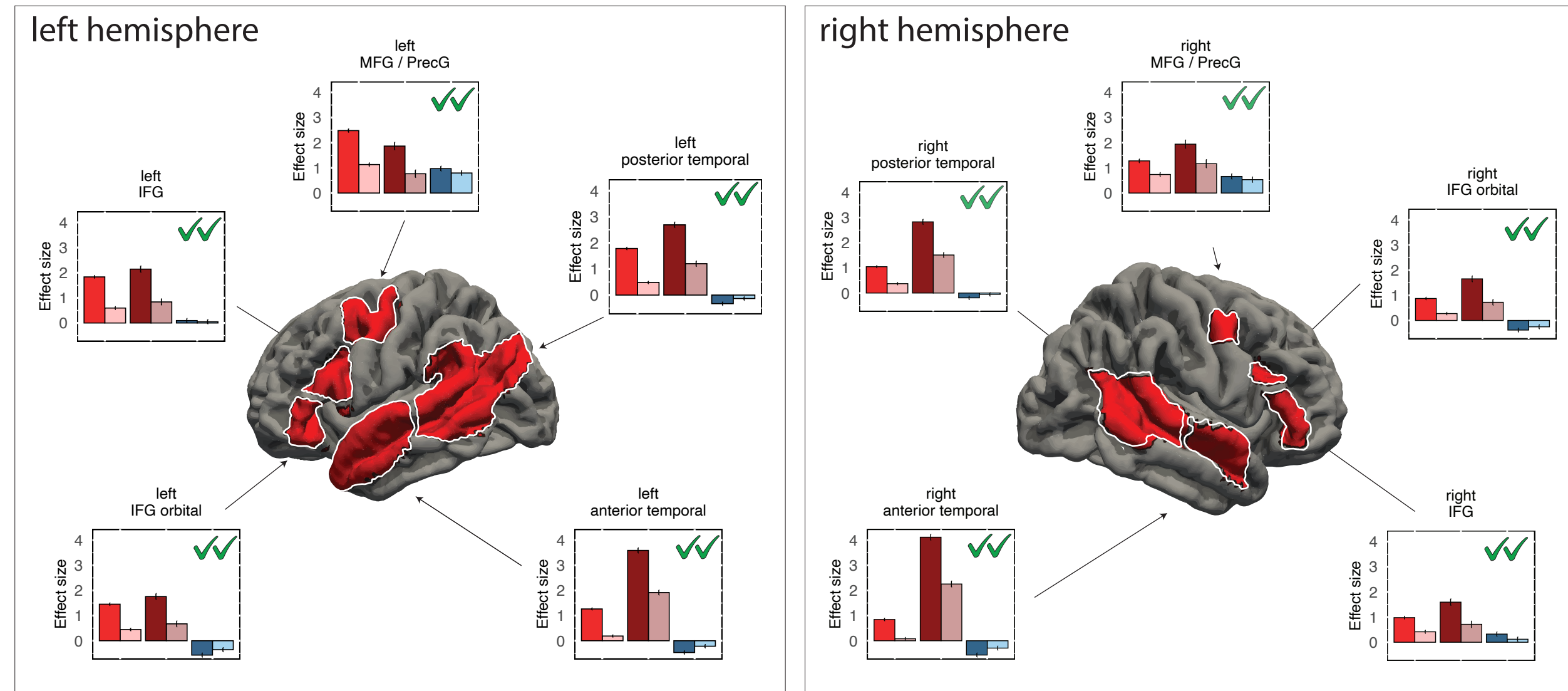
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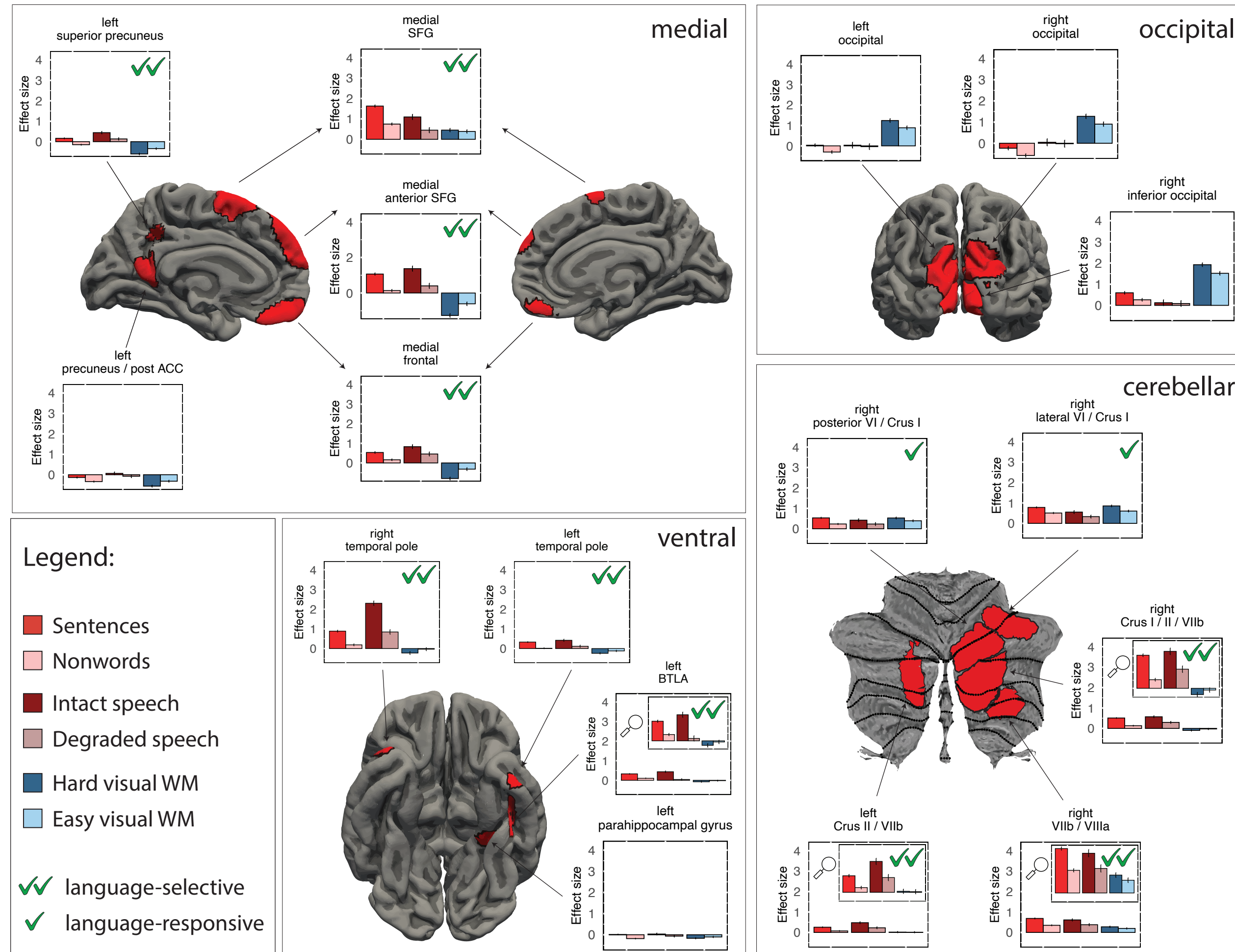


RESULTS: GSS language parcels

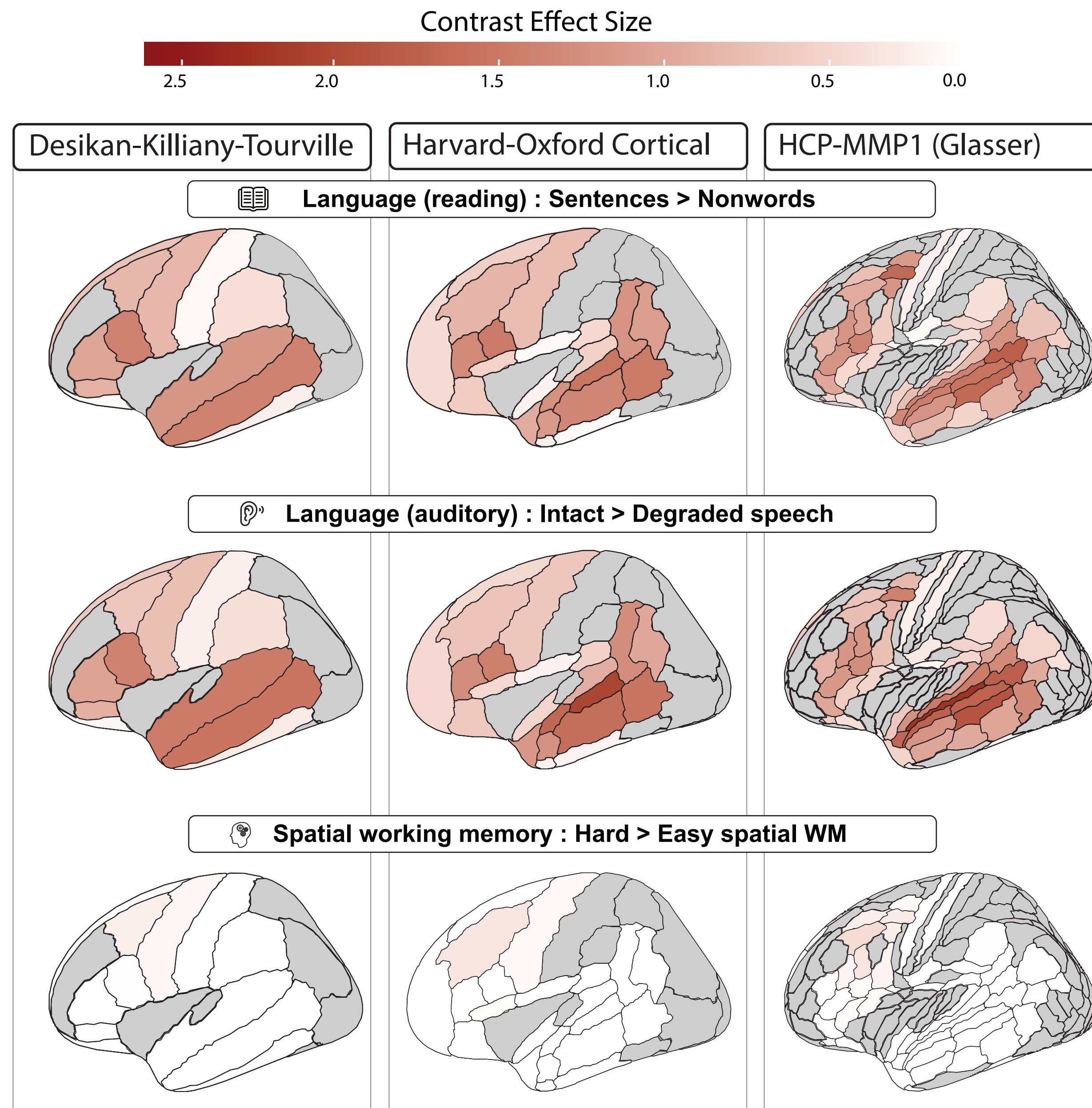
(A) Core fronto-temporal parcels



(B) Extended parcels



RESULTS: standard cortical atlases



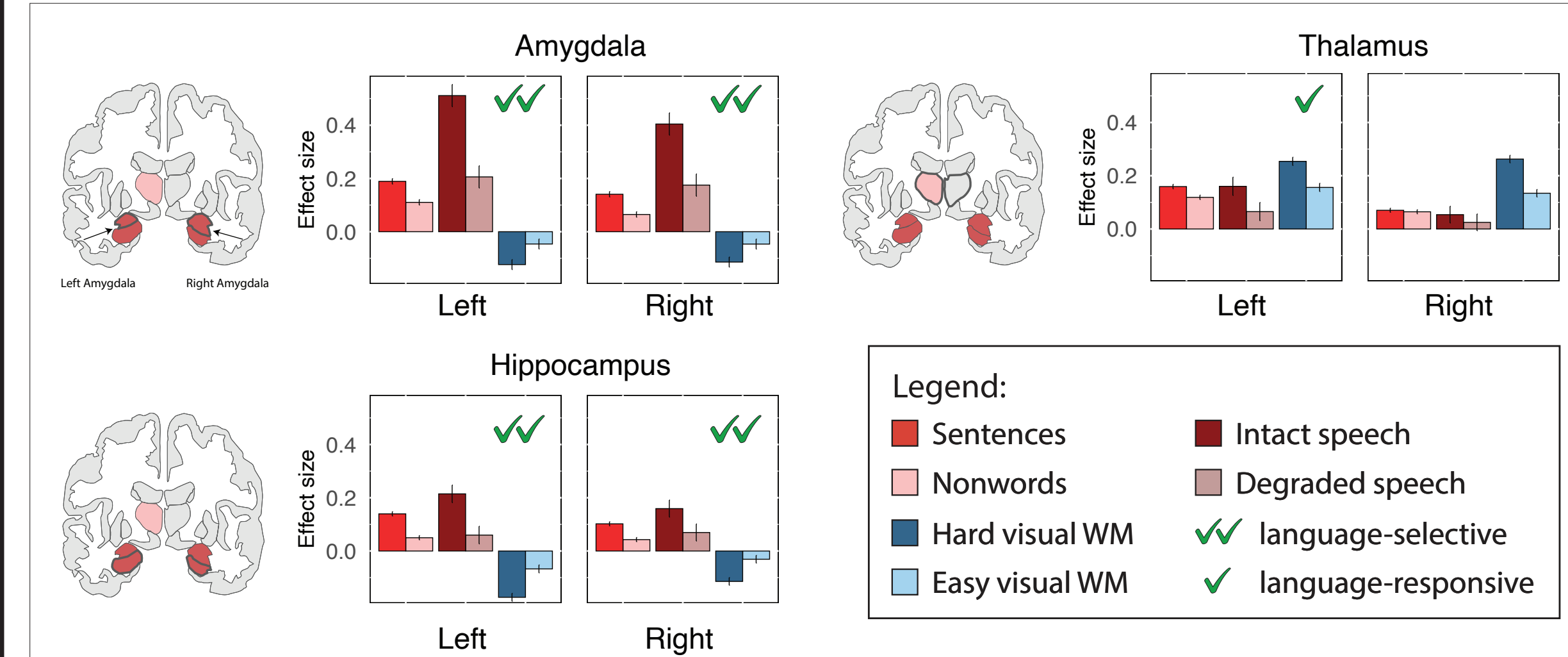
Coarse, anatomy-based parcellations are not well-suited to study language: language processing in the brain **does not “obey” anatomical boundaries**

Function-based parcellations, like GSS and some standard parcellations (including Glasser but also atlases based on functional connectivity, e.g., Shain et al., 2025), **provide a better window to study language in the brain**

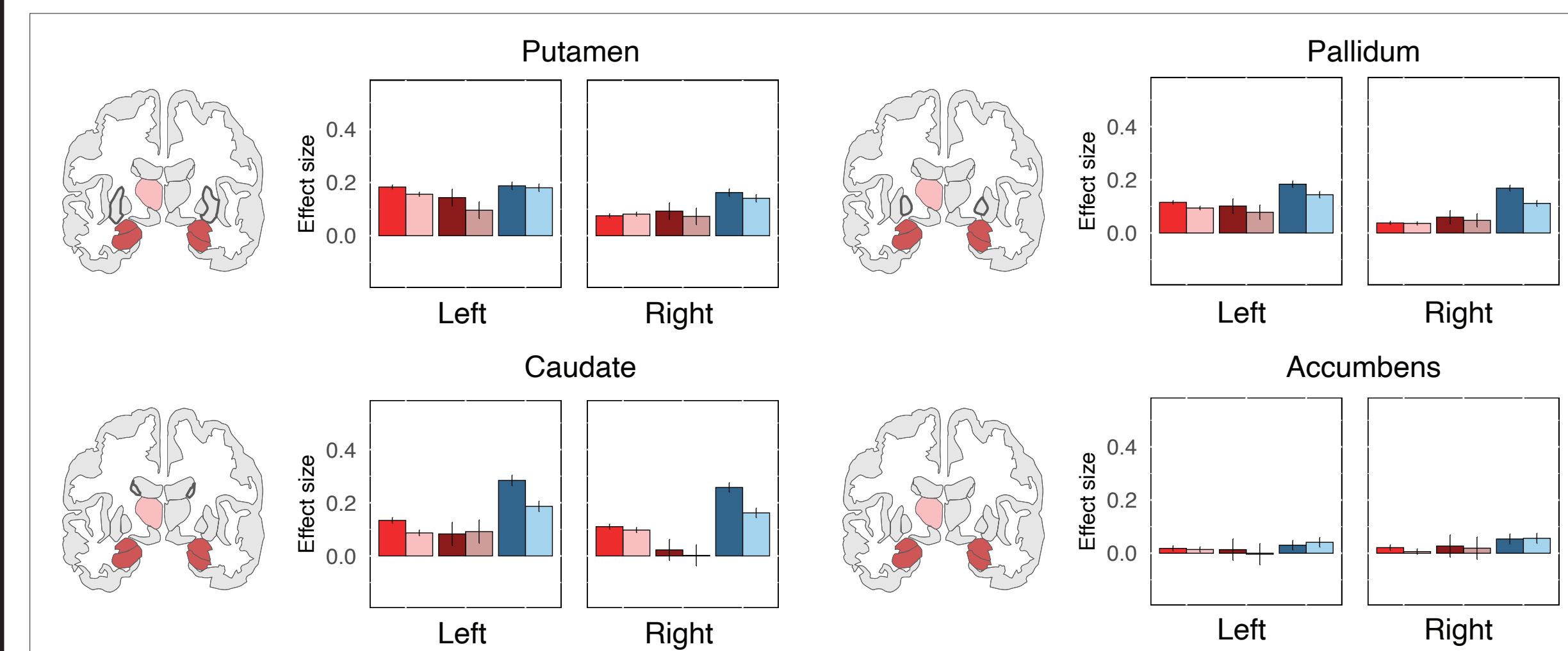
- Regardless of the group-level parcellation used, **language responses** should always be studied using **subject-specific, functionally localized regions!**

RESULTS: subcortical responses

(A) Subcortical structures that contain language-selective or language-responsive fROIs



(B) Subcortical structures that do not contain language-selective or language-responsive fROIs



Challenging previous claims, we find **no responsiveness to language** (amodal response to both reading and auditory language processing) in **basal ganglia and occipital cortex**

- In previous reports, language processing might be conflated with domain-general task, and attentional demands
- Not all language paradigms are well-suited to identify language-selective brain regions!